Michael S Freund

List of Publications by Year
in descending order

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118 papers	5,457 citations	81900 39 h-index	88630 70 g-index
121 all docs	121 docs citations	121 times ranked	6426 citing authors

#	Article	IF	Citations
1	A PVT Compensated Resistance to Frequency Converter for Sensor Array Read-Out. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 2418-2422.	3.0	1
2	Investigation of Hydrogen Oxidation and Evolution Reactions at Porous Pt/C Electrodes in Nafion-Based Membrane Electrode Assemblies Using Impedance Spectroscopy and Distribution of Relaxation Times Analysis. Journal of Physical Chemistry C, 2022, 126, 132-150.	3.1	12
3	A Review on Advanced Sensing Materials for Agricultural Gas Sensors. Sensors, 2021, 21, 3423.	3.8	35
4	Recent Advances in Bipolar Membrane Design and Applications. Chemistry of Materials, 2020, 32, 8060-8090.	6.7	96
5	Vapor-fed electrolysis of water using earth-abundant catalysts in Nafion or in bipolar Nafion/poly(benzimidazolium) membranes. Sustainable Energy and Fuels, 2019, 3, 3611-3626.	4.9	14
6	Characterization of highâ€aspectâ€ratio periodic structures by Xâ€ray photoelectron spectroscopy. Surface and Interface Analysis, 2017, 49, 503-514.	1.8	0
7	Membranes for artificial photosynthesis. Energy and Environmental Science, 2017, 10, 1320-1338.	30.8	65
8	Catalytic, Conductive Bipolar Membrane Interfaces through Layerâ€byâ€Layer Deposition for the Design of Membraneâ€Integrated Artificial Photosynthesis Systems. ChemSusChem, 2017, 10, 4599-4609.	6.8	19
9	Transparent Bipolar Membrane for Water Splitting Applications. ACS Applied Materials & Interfaces, 2017, 9, 26749-26755.	8.0	41
10	Polythiophene: From Fundamental Perspectives to Applications. Chemistry of Materials, 2017, 29, 10248-10283.	6.7	286
11	Current developments in silicene and germanene. Physica Status Solidi - Rapid Research Letters, 2016, 10, 133-142.	2.4	99
12	Monohydride signature as a key predictor of successful Si(110) surface functionalization. RSC Advances, 2016, 6, 88239-88243.	3.6	2
13	Materials properties of out-of-plane heterostructures of MoS2-WSe2 and WS2-MoSe2. Applied Physics Letters, 2016, 108, .	3.3	79
14	Electric and Photoelectric Properties of 3,4â€“Ethylenedioxythiopheneâ€Functionalized nâ€Si/PEDOT:PSS Junctions. ChemSusChem, 2016, 9, 109-117.	6.8	8
15	Analyte discrimination with chemically diverse sensor array based on electrocopolymerized pyrrole and vinyl derivatives. RSC Advances, 2016, 6, 32549-32559.	3.6	2
16	Band gap modulation in polythiophene and polypyrrole-based systems. Scientific Reports, 2016, 6, 36554.	3.3	41
17	Temporal responses of chemically diverse sensor arrays for machine olfaction using artificial intelligence. Sensors and Actuators B: Chemical, 2016, 231, 666-674.	7.8	7
18	Reduced Graphene Oxide Bipolar Membranes for Integrated Solar Water Splitting in Optimal pH. ChemSusChem, 2015, 8, 2645-2654.	6.8	32

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19	Covalent Attachment of Ferrocene to Silicon Microwire Arrays. ACS Applied Materials & Interfaces, 2015, 7, 26959-26967.	8.0	13
20	Electrical Characteristics of the Junction between PEDOT:PSS and Thiophene-Functionalized Silicon Microwires. ACS Applied Materials & Interfaces, 2015, 7, 27160-27166.	8.0	18
21	Structural and Electronic Properties of Pristine and Doped Polythiophene: Periodic versus Molecular Calculations. Journal of Physical Chemistry C, 2015, 119, 3979-3989.	3.1	39
22	Chemically diverse sensor arrays based on electrochemically copolymerized pyrrole and styrene derivatives. Sensors and Actuators B: Chemical, 2015, 215, 510-517.	7.8	8
23	Electrically Engineered Band Gap in Two-Dimensional Ge, Sn, and Pb: A First-Principles and Tight-Binding Approach. Journal of Physical Chemistry C, 2015, 119, 11896-11902.	3.1	41
24	Piezoresistive characterization of bottom-up, n-type silicon microwires undergoing bend deformation. Applied Physics Letters, 2015, 106, 022107.	3.3	10
25	Electrically conducting collagen and collagenâ€“mineral composites for current stimulation. RSC Advances, 2015, 5, 57318-57327.	3.6	13
26	Polymer-Based Memory Structures on Copper Substrates. Journal of the Electrochemical Society, 2014, 161, D367-D371.	2.9	2
27	Measurement of the Electrical Resistance of n-Type Si Microwire/p-Type Conducting Polymer Junctions for Use in Artificial Photosynthesis. Journal of Physical Chemistry C, 2014, 118, 27742-27748.	3.1	9
28	An inductively coupled passive tag for remote basic volatile sensing. , 2014, , .		1
29	Use of Bipolar Membranes for Maintaining Steadyâ€State pH Gradients in Membraneâ€Supported, Solarâ€Driven Water Splitting. ChemSusChem, 2014, 7, 3021-3027.	6.8	107
30	Large Enhancement and Tunable Band Gap in Silicene by Small Organic Molecule Adsorption. Journal of Physical Chemistry C, 2014, 118, 23361-23367.	3.1	162
31	Fluid Embeddable Coupled Coil Sensor for Wireless pH Monitoring in a Bioreactor. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 1337-1346.	4.7	23
32	Graphene Oxide as a Water Dissociation Catalyst in the Bipolar Membrane Interfacial Layer. ACS Applied Materials & Interfaces, 2014, 6, 13790-13797.	8.0	77
33	Chemical diversity in electrochemically deposited conducting polymer-based sensor arrays. Sensors and Actuators B: Chemical, 2014, 202, 600-608.	7.8	20
34	Polymer-Based Chemicapacitor Sensor for 1-Octanol and Relative Humidity Detections at Different Temperatures and Frequencies. IEEE Sensors Journal, 2013, 13, 519-527.	4.7	7
35	A Wireless Passive Sensor for Temperature Compensated Remote pH Monitoring. IEEE Sensors Journal, 2013, 13, 2428-2436.	4.7	65
36	CHAPTER 17. Self-Doped Polymers. RSC Polymer Chemistry Series, 2013, , 359-386.	0.2	1

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37	Controlling volatility in solid-state, redox-based memory devices using heterojunction barriers to ion transport. Chemical Communications, 2012, 48, 9409.	4.1	7
38	Comparison between the electrical junction properties of H-terminated and methyl-terminated individual Si microwire/polymer assemblies for photoelectrochemical fuel production. Energy and Environmental Science, 2012, 5, 9789.	30.8	18
39	An extended floating gate gas sensor using polypyrrole as a sensing polymer. , 2012, , .		0
40	Fabrication and Optimization of a Conducting Polymer Sensor Array Using Stored Grain Model Volatiles. Journal of Agricultural and Food Chemistry, 2012, 60, 2863-2873.	5.2	22
41	Carbon Black Polymer Sensor Array for Incipient Grain Spoilage Monitoring. Agricultural Research, 2012, 1, 87-94.	1.7	5
42	Characterization of volatile organic compounds released by granivorous insects in stored wheat. Journal of Stored Products Research, 2012, 48, 91-96.	2.6	24
43	Scaling and Anisotropic Conduction in Electrochemically Deposited Polypyrrole Hybrid Junctions. IEEE Electron Device Letters, 2011, 32, 815-817.	3.9	1
44	Electrode Potential-Based Coupled Coil Sensor for Remote pH Monitoring. IEEE Sensors Journal, 2011, 11, 2813-2819.	4.7	22
45	Characterization of the Electrical Properties of Individual p-Si Microwire/Polymer/n-Si Microwire Assemblies. Journal of Physical Chemistry C, 2011, 115, 24945-24950.	3.1	15
46	Electrical Characterization of Si Microwires and of Si Microwire/Conducting Polymer Composite Junctions. Journal of Physical Chemistry Letters, 2011, 2, 675-680.	4.6	17
47	Self-Assembly of Alkylthiosulfates on Gold: Role of Electrolyte and Trace Water in the Solvent. Langmuir, 2011, 27, 9028-9033.	3.5	7
48	Novel Conducting Polymer-Heteropoly Acid Hybrid Material for Artificial Photosynthetic Membranes. ACS Applied Materials & Interfaces, 2011, 3, 1003-1008.	8.0	8
49	A wireless passive sensor for pH monitoring employing temperature compensation. , 2011, , .		1
50	Designing electronic/ionic conducting membranes for artificial photosynthesis. Energy and Environmental Science, 2011, 4, 1700.	30.8	53
51	Wireless Passive Sensor for Remote pH Monitoring. Journal of Nanotechnology in Engineering and Medicine, 2011, 2, .	0.8	2
52	Polymer-based gas sensor on a thermally stable micro-cantilever. Procedia Engineering, 2010, 5, 21-24.	1.2	10
53	Development of carbon dioxide (CO2) sensor for grain quality monitoring. Biosystems Engineering, 2010, 106, 395-404.	4.3	71
54	Photoexcitation of Intrinsic Plasmon in Emeraldine Electroactive Device. Journal of the Electrochemical Society, 2010, 157, H787.	2.9	1

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55	A Polypyrrole/Phosphomolybdic Acidâˆ£Poly(3,4-ethylenedioxythiophene)/Phosphotungstic Acid Asymmetric Supercapacitor. Journal of the Electrochemical Society, 2010, 157, A1030.	2.9	78
56	A One-Step, Organic-Solvent Processable Synthesis of PEDOT Thin Films via in Situ Metastable Chemical Polymerization. Macromolecules, 2010, 43, 10241-10245.	4.8	71
57	Electrochemically Assisted Self-Assembly of Alkylthiosulfates and Alkanethiols on Gold: The Role of Gold Oxide Formation and Corrosion. Langmuir, 2010, 26, 269-276.	3.5	14
58	A wireless passive pH sensor based on pH electrode potential measurement. , 2010, , .		3
59	Field enhanced charge carrier reconfiguration in electronic and ionic coupled dynamic polymer resistive memory. Nanotechnology, 2010, 21, 134003.	2.6	8
60	Dynamic resistive crossbar memory based on conjugated polymer composite. Applied Physics Letters, 2009, 94, 092113.	3.3	12
61	Compensation Doping in Conjugated Polymers: Engineering Dopable Heterojunctions for Modulating Conductivity in the Solid State. Journal of the American Chemical Society, 2009, 131, 15600-15601.	13.7	10
62	XPS spectra of uranyl minerals and synthetic uranyl compounds. II: The O 1s spectrum. Geochimica Et Cosmochimica Acta, 2009, 73, 2488-2509.	3.9	77
63	XPS spectra of uranyl minerals and synthetic uranyl compounds. I: The U 4f spectrum. Geochimica Et Cosmochimica Acta, 2009, 73, 2471-2487.	3.9	129
64	Dissolution of uranophane: An AFM, XPS, SEM and ICP study. Geochimica Et Cosmochimica Acta, 2009, 73, 2510-2533.	3.9	12
65	Self-Doped Polyaniline Nanoparticle Dispersions Based on Boronic Acidâ^'Phosphate Complexation. Macromolecules, 2009, 42, 164-168.	4.8	40
66	Conducting Poly(anilineboronic acid) Nanostructures: Controlled Synthesis and Characterization. Macromolecular Chemistry and Physics, 2008, 209, 1094-1105.	2.2	27
67	Fieldâ€Induced Carrier Generation in Conjugated Polymer Semiconductors for Dynamic, Asymmetric Junctions. Advanced Materials, 2008, 20, 49-53.	21.0	17
68	Porous Conducting Polymer/Heteropolyoxometalate Hybrid Material for Electrochemical Supercapacitor Applications. Langmuir, 2008, 24, 1064-1069.	3.5	117
69	Metastable Reaction Mixtures for the in Situ Polymerization of Conducting Polymers. Macromolecules, 2007, 40, 7166-7170.	4.8	13
70	A Novel Layer-by-Layer Approach for the Fabrication of Conducting Polymer/RNA Multilayer Films for Controlled Release. Langmuir, 2006, 22, 2811-2815.	3.5	60
71	Biogenic amine vapour detection using poly(anilineboronic acid) films. Sensors and Actuators B: Chemical, 2006, 115, 666-671.	7.8	31
72	pH Dependent Equilibria of Poly(anilineboronic acid)-Saccharide Complexation in Thin Films. Macromolecular Chemistry and Physics, 2006, 207, 660-664.	2.2	12

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73	Highly Cross-Linked, Self-Doped Polyaniline Exhibiting Unprecedented Hardness. Chemistry of Materials, 2005, 17, 3803-3805.	6.7	31
74	Thermal Stability of High Molecular Weight Self-Doped Poly(anilineboronic acid). Macromolecules, 2005, 38, 10022-10026.	4.8	19
75	Reactivity of Poly(anilineboronic acid) with NAD+and NADH. Chemistry of Materials, 2005, 17, 2918-2923.	6.7	55
76	Substitution and Condensation Reactions with Poly(anilineboronic acid):â€‰ Reactivity and Characterization of Thin Films. Langmuir, 2005, 21, 3670-3674.	3.5	19
77	Broadening the scope of The Analyst and fostering innovation. Analyst, The, 2004, 129, 283.	3.5	2
78	Electroactivity of Electrochemically Synthesized Poly(Aniline Boronic Acid) as a Function of pH: Role of Self-Doping. Chemistry of Materials, 2004, 16, 1427-1432.	6.7	45
79	A Switchable Self-Doped Polyaniline:Â Interconversion between Self-Doped and Non-Self-Doped Forms. Journal of the American Chemical Society, 2004, 126, 52-53.	13.7	112
80	Reversible and Efficient Materials-based Actuation by Electrolytic Phase Transformation. Chemical Engineering and Technology, 2003, 26, 1007-1011.	1.5	6
81	Electrochemical Self-Assembly of Monolayers from Alkylthiosulfates on Gold. Langmuir, 2003, 19, 5246-5253.	3.5	30
82	Saccharide imprinting of poly(aniline boronic acid) in the presence of fluoride. Analyst, The, 2003, 128, 803.	3.5	70
83	‹title›Electrolytic phase transformation actuators‹/title›. , 2003, , .		0
84	Electrolytic actuators: Alternative, high-performance, material-based devices. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 7827-7831.	7.1	57
85	Potentiometric Saccharide Detection Based on the pKaChanges of Poly(aniline boronic acid). Journal of the American Chemical Society, 2002, 124, 12486-12493.	13.7	266
86	Exploitation of spatiotemporal information and geometric optimization of signal/noise performance using arrays of carbon black-polymer composite vapor detectors. Sensors and Actuators B: Chemical, 2002, 82, 54-74.	7.8	56
87	Electron Transfer Dynamics in Nanocrystalline Titanium Dioxide Solar Cells Sensitized with Ruthenium or Osmium Polypyridyl Complexes. Journal of Physical Chemistry B, 2001, 105, 392-403.	2.6	276
88	Potentiometric Sensors Based on the Inductive Effect on the pKaof Poly(aniline):Â A Nonenzymatic Glucose Sensor. Journal of the American Chemical Society, 2001, 123, 3383-3384.	13.7	334
89	Poly(aniline boronic acid):â€‰ A New Precursor to Substituted Poly(aniline)s. Langmuir, 2001, 17, 7183-7185.	3.5	23
90	Array Based Carbon Black-Polymer Composite Vapor Detectors for Detection of DNT in Environments Containing Complex Analyte Mixtures. Materials Research Society Symposia Proceedings, 2001, 700, 411.	0.1	0

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91	Array-based carbon black-polymer composite vapor detectors for detection of DNT in environments containing complex analyte mixtures. , 2001, 4394, 912.		1
92	Reaction of Pyrrole and Chlorauric Acid A New Route to Composite Colloids. Journal of the Electrochemical Society, 2001, 148, D155.	2.9	209
93	Electrochemically Directed Self-Assembly on Gold. Angewandte Chemie - International Edition, 2000, 39, 1227-1230.	13.8	34
94	Mechanism of the carbon catalyzed reduction of nitrobenzene by hydrazine. Carbon, 2000, 38, 655-661.	10.3	100
95	A reverse bias, tip-insulator-semiconductor tunnel diode model accounting for the delineation of a p/p+ junction using scanning tunneling microscopy. Journal of Applied Physics, 2000, 87, 4476-4482.	2.5	1
96	Progress in use of carbon-black-polymer composite vapor detector arrays for land mine detection. , 2000, , .		10
97	Influence of Organic Solvents on the Kinetics of Electron Transfer and the Adsorption at Highly Oriented Pyrolytic Graphite. Langmuir, 2000, 16, 283-286.	3.5	15
98	Chemically diverse modified electrodes: A new approach to the design and implementation of sensor arrays. Analytica Chimica Acta, 1999, 397, 135-144.	5.4	15
99	Observation of tip-induced gap states in lightly doped Si(100) using scanning tunneling spectroscopy. Applied Physics Letters, 1999, 74, 1105-1107.	3.3	3
100	Indirect Electrochemical Detection of Type-B Trichothecene Mycotoxins. Analytical Chemistry, 1999, 71, 4075-4080.	6.5	21
101	Air Oxidation of Self-Assembled Monolayers on Polycrystalline Gold:Â The Role of the Gold Substrate. Langmuir, 1998, 14, 6419-6423.	3.5	137
102	Doping-density dependence of scanning tunneling spectroscopy on lightly doped silicon. Applied Physics Letters, 1998, 72, 1993-1995.	3.3	15
103	Elimination of spectral shifts associated with tip-induced band bending in scanning tunneling spectroscopy of lightly doped silicon. Applied Physics Letters, 1998, 73, 2462-2464.	3.3	13
104	Artificial Neural Network Processing of Stripping Analysis Responses for Identifying and Quantifying Heavy Metals in the Presence of Intermetallic Compound Formation. Analytical Chemistry, 1997, 69, 2373-2378.	6.5	38
105	New Approach for the Controlled Cross-Linking of Polyaniline:Â Synthesis and Characterization. Macromolecules, 1997, 30, 5660-5665.	4.8	63
106	Nucleophilic Substitution Reactions of Polyaniline with Substituted Benzenediazonium Ions:Â A Facile Method for Controlling the Surface Chemistry of Conducting Polymers. Chemistry of Materials, 1996, 8, 1164-1166.	6.7	37
107	Surface Structure of Single-Crystal MoS2(0002) and Cs/MoS2(0002) by X-ray Photoelectron Diffraction. The Journal of Physical Chemistry, 1996, 100, 10739-10745.	2.9	27
108	Growth of thin processable films of poly(pyrrole) using phosphomolybdate clusters. Inorganica Chimica Acta, 1995, 240, 447-451.	2.4	27

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109	A chemically diverse conducting polymer-based "electronic nose".. Proceedings of the National Academy of Sciences of the United States of America, 1995, 92, 2652-2656.	7.1	315
110	Electrocatalytic functionalization of alkanes using aqueous platinum salts. Journal of Molecular Catalysis, 1994, 87, L11-L15.	1.2	46
111	Irreversible electrocatalytic reduction of V(V) to V(IV) using phosphomolybdic acid. Inorganic Chemistry, 1994, 33, 1638-1643.	4.0	16
112	Semiintegral analysis in cyclic voltammetry: determination of surface excess and concentration in presence of weak adsorption and thin films. The Journal of Physical Chemistry, 1992, 96, 9400-9406.	2.9	23
113	Scanning tunneling microscopy and atomic force microscopy in the characterization of activated graphite electrodes. Analytical Chemistry, 1991, 63, 1047-1049.	6.5	46
114	Anion-excluding polypyrrole films. Talanta, 1991, 38, 95-99.	5.5	56
115	Effect of electrode substrate on the morphology and selectivity of overoxidized polypyrrole films. Analytical Chemistry, 1991, 63, 622-626.	6.5	110
116	Determination of ultramicroelectrode array dimensions at graphite and one-dimensional organic conductor electrodes using simulations, chronocoulometry and chronoamperometry. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1991, 300, 347-363.	0.1	7
117	Electrochemical and quartz crystal microbalance evidence for mediation and direct electrochemical reactions of small molecules at tetrathiafulvalene-te. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1990, 289, 127-141.	0.1	39
118	Ultramicroelectrode array behavior of one-dimensional organic conductor electrodes. Analytical Chemistry, 1989, 61, 1048-1052.	6.5	32